

REMARKS

The specification and claim 3 have been amended to correct typographical errors. A marked copy showing the changes to the specification and claim 3 is attached hereto as "Version with Markings to Show Changes Made."

Prompt and favorable examination is earnestly solicited.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE (09/893,703)

IN THE SPECIFICATION:

The specification have been amended as follows:

Paragraph beginning at page 5, line 15 has been amended as follows:

Examples of the above-mentioned polymeric material to form the coating layer includes a copolymer comprising at least two types of elements selected from the group consisting of acrylic acid ester, methacrylic acid ester, aromatic olefin, conjugated diene and olefin. Specifically, ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer, ethylene-acrylic acid ester copolymer, methacrylic acid methyl-butadiene copolymer, ~~styrene~~ styrene-butadiene copolymer and the like can be employed.

Furthermore, a rubber material such as butadiene polymer can be employed.

Paragraph beginning at page 10, line 3 has been amended as follows:

Further, a solution of latex comprising 4 % by weight of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer was applied to the surface of the hydrogen absorbing alloy electrode, was dried at a temperature of 90 °C for 30 minutes, and then pressed, to fabricate a hydrogen absorbing

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alloy electrode having a coating layer formed thereon composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer.

Paragraph beginning at page 11, line 21 has been amended as follows:

In each of the examples 2 to 5, in forming a coating layer on a hydrogen absorbing alloy electrode in the example 1, the type of a polymeric material to be employed in a coating layer was changed. Specifically, ethylene-acrylic acid ester copolymer was used in the example 2; methacrylic acid methyl-butadiene copolymer in the example 3; ~~styrene~~ styrene-butadiene copolymer in the example 4; and butadiene polymer in the example 5, as shown in the following Table 1a. Except that the above-mentioned polymeric materials were employed in the example 2 to 5, a coating layer was formed on a surface of each hydrogen absorbing alloy electrode in the same manner as that in the example 1.

Paragraph beginning at page 14, line 23 has been amended as follows:

In the comparative example 5, in forming a coating layer on a surface of a hydrogen absorbing alloy electrode in the example 1, 1 part by weight of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer which was a binding agent was added

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to 100 part by weight of the above-mentioned hydrogen absorbing alloy powder, to fabricate a hydrogen absorbing alloy electrode.

Paragraph beginning at page 14, line 23 has been amended as follows:

In the comparative example 5, in forming a coating layer on a surface of a hydrogen absorbing alloy electrode in the example 1, 1 part by weight of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer which was a binding agent was added to 100 part by weight of the above-mentioned hydrogen absorbing alloy powder, to fabricate a hydrogen absorbing alloy electrode.

Paragraph beginning at page 15, line 5 has been amended as follows:

Except that the coating layer composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer was formed on a surface of a hydrogen absorbing alloy electrode in the same manner as that in the example 1, and that a hydrogen absorbing alloy electrode employing styrene-methacrylic acid ester-acrylic acid ester copolymer as both a binding agent in the electrode and a coating layer was employed, an alkaline storage battery in the comparative example 5 was fabricated in the same manner as that in the example 1.

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Table 1a at page 17, line 1 has been amended as follows:

Table 1a

	polymeric material in coating layer	polymeric material in binding agent	output characteristics (V)
example 1	<u>styrene</u> <u>styrene</u> -methacrylic acid ester-acrylic acid ester copolymer	polyethylene oxide and polyvinyl pyrrolidone	1.165
example 2	ethylene-acrylic acid ester copolymer	polyethylene oxide and polyvinyl pyrrolidone	1.164
example 3	methacrylic acid methyl-butadiene copolymer	polyethylene oxide and polyvinyl pyrrolidone	1.164
example 4	<u>styrene</u> <u>styrene</u> -butadiene copolymer	polyethylene oxide and polyvinyl pyrrolidone	1.163
example 5	butadiene polymer	polyethylene oxide and polyvinyl pyrrolidone	1.159
comparative example 1	polyethylene oxide and polyvinyl pyrrolidone	polyethylene oxide and polyvinyl pyrrolidone	1.155
comparative example 2	polytetrafluoro-ethylene	polyethylene oxide and polyvinyl pyrrolidone	1.150
comparative example 3	polytetrafluoro-ethylene, acetylene black and polyvinyl pyrrolidone	polyethylene oxide and polyvinyl pyrrolidone	1.154
comparative example 4	none	polyethylene oxide and polyvinyl pyrrolidone	1.158
comparative example 5	<u>styrene</u> <u>styrene</u> -methacrylic acid ester-acrylic acid ester copolymer	<u>styrene</u> <u>styrene</u> -methacrylic acid ester-acrylic acid ester copolymer	1.149

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Paragraph beginning at page 18, line 3 from the bottom has been amended as follows:

As apparent from the results, compared with each of the alkaline storage batteries in the comparative examples 1 and 5 employing the same polymeric material as both binding agent and coating layer, each of the alkaline storage batteries in the comparative examples 2 and 3 employing fluorocarbon resin as a coating layer to be provided on a surface of a hydrogen absorbing alloy electrode, and an alkaline storage battery in the comparative example 4 not having a coating layer on a surface of a hydrogen absorbing alloy electrode, in each of the alkaline batteries in the examples 1 to 5 employing as a polymeric material in a coating layer to be provided on a surface of a hydrogen absorbing alloy electrode, ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer, ethylene-acrylic acid ester copolymer, methacrylic acid methyl-butadiene copolymer, ~~styrene~~ styrene-butadiene copolymer and butadiene polymer, and as a binding agent polyethylene oxide and polyvinyl pyrrolidone which are different from the polymeric material in the coating layer, output characteristics, charge/discharge cycle performance, internal pressure performance and bond strength were all improved.

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Paragraph beginning at page 19, line 21 has been amended as follows:

In each of the examples 1.1 to 1.6, in applying a solution of latex containing ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer to a surface of a hydrogen absorbing alloy electrode, to form a coating layer composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer on a surface of a hydrogen absorbing alloy electrode in the example 1, a concentration of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer in the above-mentioned solution of latex was changed. Specifically, the concentration was 0.8 % by weight in the example 1.1, 1.7 % by weight in the example 1.2, 8 % by weight in the example 1.3, 17 % by weight in the example 1.4, 33 % by weight in the example 1.5, and 42 % by weight in the example 1.6.

Paragraph beginning at page 20, line 10 has been amended as follows:

When a coating layer composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer was provided on a surface of each hydrogen absorbing alloy electrode as described above, the weight ratio of the coating layer to the total of the coating layer, hydrogen absorbing alloy powder, and a binding agent was 0.1 % by weight in the example 1.1, 0.2 % by

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weight in the example 1.2, 1 % by weight in the example 1.3, 2 % by weight in the example 1.4, 4 % by weight in the example 1.5, and 5 % by weight in the example 1.6.

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Table 2 at page 22, line 1 has been amended as follows:

Table 2

<p>a coating layer : styrene <u>styrene</u>-methacrylic acid ester-acrylic acid ester copolymer a binding agent : polyethylene oxide and polyvinyl pyrrolidone</p>			
	weight ratio of coating layer (% by weight)	output characteristics (V)	bond strength (number of squares whose electrode material is put off)
example 1.1	0.1	1.160	22
example 1.2	0.2	1.163	20
example 1	0.5	1.165	20
example 1.3	1	1.164	20
example 1.4	2	1.163	20
example 1.5	4	1.161	20
example 1.6	5	1.160	20

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Paragraph beginning at page 23, line 5 has been amended as follows:

Further, in the example 1.1 to 1.6, an example of a case where ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer was employed to form a coating layer was shown. However, ethylene-acrylic acid ester copolymer, methacrylic acid methyl-butadiene copolymer, ~~styrene~~ styrene-butadiene copolymer and butadiene polymer are employed to form a coating layer, the same results can be obtained.

Paragraph beginning at page 23, line 13 has been amended as follows:

In each of the examples 1.7 to 1.11, in applying a solution of latex consisting 4 % by weight of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer to a surface of a hydrogen absorbing alloy electrode, drying the above-mentioned solution, to form the coating layer composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer on the surface of the electrode in the same manner as that in the example 1, the temperature at which the above-mentioned solution was dried for 30 minutes was 30 °C in the example 1.7, 50 °C in the example 1.8, 60 °C in the example 1.9, 80 °C in the example 1.10, and 100 °C in the example 1.11, as shown in the following Table 3.

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Table 3 at page 25, line 1 has been amended as follows:

Table 3

a coating layer : styrene <u>styrene</u> -methacrylic acid ester-acrylic acid ester copolymer a binding agent : polyethylene oxide and polyvinyl pyrrolidone			
	drying temperature (°C)	output characteristics (V)	bond strength (number of squares whose electrode material is put off)
example 1.7	30	1.160	23
example 1.8	50	1.162	20
example 1.9	60	1.164	20
example 1.10	80	1.165	20
example 1	90	1.165	20
example 1.11	100	1.163	22

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Paragraph beginning at page 25, line 6 from the bottom has been amended as follows:

As apparent from the results, in applying a solution of latex consisting ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer to a surface of a hydrogen absorbing alloy electrode, drying the above-mentioned solution, to form the coating layer composed of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer on the surface of the electrode, in each of alkaline storage batteries in the example 1, 1.9 and 1.10, wherein the temperature at which the above-mentioned solution was dried was 60 to 90 °C, output characteristics and bond strength were improved, compared with each of alkaline storage batteries in the example 1.7, 1.8 and 1.11, wherein the foregoing temperature was out of the above-mentioned range.

Paragraph beginning at page 26, line 8 has been amended as follows:

Further, in the example 1.7 to 1.11, an example of a case where ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer was employed to form a coating layer was shown. However, when ethylene-acrylic acid ester copolymer, methacrylic acid methyl-butadiene copolymer, ~~styrene~~ styrene-butadiene copolymer and butadiene polymer are employed as a coating layer, the same results can be obtained.

IN THE CLAIMS:

Claim 3 has been amended as follows:

3. (Amended) The hydrogen absorbing alloy electrode according to claim 1, wherein

the polymeric material in said coating layer is at least one type of elements selected from the group consisting of ~~styrene~~ styrene-methacrylic acid ester-acrylic acid ester copolymer, ethylene-acrylic acid ester copolymer, methacrylic acid methyl-butadiene copolymer, styrene-butadiene copolymer and butadiene polymer.